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Materials



Design



Processes



Units



Formulas

Polyethylene and ethylene copolymers

State: high density homopolymer

Material Properties

Mechanical Properties

		State 1	State 2
Elastic Modulus (MPa)	1070 - 1091	tensile	
Flexural Modulus (MPa)	1001 - 1553	23 °C	
Tensile Strength (MPa)	23 - 32	at break	
	27 - 34	at yield	
Compressive Strength (MPa)	19 - 25		
at yield or break			
Elongation at break (%)	10 - 1200		
Hardness	66 - 73	Shore D	
Izod Impact (J/cm of notch)	0.2 - 2.1		
1/8" thick specimen unless noted			

Thermal Properties

		Pressure	State
Coef of Thermal Expansion ($10^{-6}/^{\circ}\text{C}$)	59 - 110		
Deflection Temperature ($^{\circ}\text{C}$)	80 - 92	0.46 MPa	
Thermal Conductivity (W/m- $^{\circ}\text{C}$)	0.460 - 0.502		

Physical & Electrical Properties

		State
Specific Gravity	0.952 - 0.965	
Water Absorption (% weight increase)	0 - 0.01	after 24 hrs
Dielectric Strength (V/mil);	450 - 500	
1/8" thick specimen unless noted		

Processing Properties

		Type
Melt Flow (gm/10 min)	5 - 18	
Melting Temperature ($^{\circ}\text{C}$)	130 - 137	T_m , crystalline
Processing Temperature ($^{\circ}\text{C}$)	177 - 260	injection molding
	177 - 274	extrusion
Molding Pressure (MPa)	83 - 104	
Compression Ratio	2	

Linear Mold Shrinkage (cm/cm)

0.015 - 0.04

Suppliers

<u>A. Schulman</u>	Akron, OH	800-
<u>American Polymers, Inc.</u>	Worcester, MA	
<u>Bamberger Polymers, Inc.</u>	Jericho, NY	
<u>Chevron Chemical Co.</u>	Houston, TX	800-
<u>Dow Plastics</u>	Midland, MI	800-
<u>Eastman Chemical Co.</u>	Kingsport, TN	800-
<u>Equistar Chemicals LP</u>	Houston, TX	888-
<u>Exxon Chemical Canada</u>	Toronto, Ontario, M5W 1K3, Canada	
<u>Exxon Chemical Co.</u>	Houston, TX	800-
<u>Federal Plastics Corp.</u>	Cranford, NJ	800-
<u>Fina Oil & Chemical Co.</u>	Dallas, TX	800-
<u>M.A. Industries, Inc.</u>	Peachtree City, GA	800-
<u>Mobil Chemical Co.</u>	Edison, NJ	
<u>Network Polymers, Inc.</u>	Akron, OH	888-
<u>NOVA Chemicals, Ltd.</u>	Calgary, Alberta T2P 5C6, Canada	
<u>Phillips Chemical Co.</u>	Bartlesville, OK	800-
<u>R.S.G. Polymers Corp.</u>	Stony Brook, NY	
<u>Shuman Plastics, Inc.</u>	Depew, NY	
<u>Solvay Polymers, Inc.</u>	Houston, TX	800-
<u>Ticona</u>	Summit, NJ	800-
<u>Union Carbide Corp.</u>	Danbury, CT	800-

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